

cannula a six-tenth per-cent. salt solution, of temperature 38° , was conducted, and after closure of the upper cannula, one of the cornua was under a tension of about ten cm. of water. The inlet end of the perfusion-cannula was clamped and attached to Grünmach-Marey polygraph, whose lever denoted on the kymographion the changes of the cornua. The spontaneous movements were excluded by a section above the respiratory centre, excluding the large and middle brain. The animal breathed well and regularly for many hours. When the uterus was carefully replaced in the abdominal cavity and the temperature and circulation kept as nearly normal as possible, then wave lines appeared on the kymographion, marked as those seen in movements of the diaphragm. The movements are spontaneous and rhythmic like those seen with excised heart of a frog. Their conclusions were as follow: 1. The uterus possesses in all stages of its development in mature rabbits the ability to cause rhythmic contractions. 2. When the temperature sinks (29° C. in rectum) gradually the contractions become more seldom, but their energy does not decrease; if the normal temperature of the animal is increased (38°), then the contractions become more frequent, by 39° considerably smaller, and by 40° irregular, and by 43° they are completely lost. 3. Disturbances of the circulation influence the movements of the uterus; compression of the aorta in a short time stops them. 4. The movements of the uterus are not connected with a centre lying outside of them, for they remain after complete isolation.—*DuBois Archiv*, 1883, 2 and 3 Heft.

IRRADIATION OF THE CENTRE OF DEGLUTITION.—Dr. S. Meltzer has studied this subject. Irradiation is a general property of nervous functions. Thus when the skin of the posterior extremities is pinched, with the movement of the posterior extremities are associated movements of the anterior. In three centres of the medulla oblongata, those of respiration, cardiac inhibition, and vaso-motorial, there is associated excitation. In this manner Hering explains Traube's curves in the blood-pressure curve as a result of associated excitation of the vaso-motor centre by the rhythmic activity of the respiratory centre. The mechanism of deglutition is one of the most precise and the best-controlled reflex in the whole animal organism. Neither removal of the brain nor narcosis exert any influence upon the setting in action of the act of deglutition. The beginning of the act of deglutition is connected with the will only, in that we voluntarily are in position to raise the mylo-hyoid muscle, and thereby press the root of the tongue against the roof of the mouth, whereby an act of deglutition is excited. The centre of deglutition is in the medulla oblongata, but Herr M. observed in dogs that after removal of the medulla oblongata at the level of the nib of the calamus scriptorius, and after the setting up of artificial respiration, the calling-out of the movement of deglutition did

not suffer in the least. With every setting into action of the function of deglutition the heart-beats were accelerated. This increase increases with the increasing number of acts of deglutition, and is inversely proportional with greatness of the time-interval between the acts of deglutition; the shorter the time between deglutition, so much more accelerated is the heart-beat. After the acceleration ensues a stage of slowing below normal. This slowing is absolute, and in the matter of percentage lower than the acceleration, and by separate acts of deglutition difficult to perceive. By a normal pulse of seventy-two in a minute, and an interval between acts of deglutition of one second, the acceleration amounts to thirty-three to thirty-five per cent., the slowing eighteen to twenty-three per cent., of the normal pulse. The acceleration as well as the slowing depend in no manner upon the quantity and the quality of the swallowed material, but are solely associated phenomena of the calling into action of the act of deglutition. During deglutition the blood-pressure sinks. Whilst the excitation of the centre is going on the necessity of breathing is lowered.

If a series of acts of deglutition are begun simultaneously with the act of suspension of breathing, the suspension would be broken sooner if there was no deglutition. Deglutition exercises an inhibitory influence upon the labor-pains, and also upon erection of the penis. Thus by fourteen to eighteen acts of deglutition at intervals of a second, the erection is completely overcome. We possess in the spread of excitation of the centre of deglutition to neighboring centres a safe isolated example of the general law of irradiation as a general peculiarity of the nervous system. Irradiation is a common property of motor excitations and also of inhibitory excitation. The excitations of reflex inhibition undergo summation after the same laws as the excitations of reflex movement.

He also found that deglutition stopped the singultus which is seen in normal conditions. He did not try its effect in the singultus of disease.—*Archiv für Physiologie*, Von DuBois-Reymond, 1883, zweites und drittes Heft.

THE TRANSFUSION OF DILUTED BLOOD.—Professors Kronecker and Martius have made experiments upon this subject. By the name of "salt-frogs" (after Cohnheim) the animals were prepared as follows: Through the central end of the divided abdominal median vein a six-tenth per cent. of salt solution was conducted, till the fluid at the peripheral ends became colorless or very lightly colored. It is generally supposed that the whole quantity of blood is replaced by salt-solution, but this is not true. If after the first transfusion the out-flowing fluid is microscopically examined blood corpuscles are found, hence the frog is not robbed of all his blood. If the frog is allowed to rest twenty-